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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,287	10/10/2000	Sachin Lawande	00-1087	4565

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EXAMINER

CHEN, ALAN S

ART UNIT	PAPER NUMBER
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2182

3

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/685,287

Applicant(s)

LAWANDE, SACHIN

Examiner

Alan S Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claim 2 is objected to because of the following informalities: define the acronym TD upon first use. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1 and 3-6 are rejected under 35 U.S.C. 102(a) as being anticipated by No. US005978858A to Bonola et al. (hereafter Bonola).
4. As per claim 1, a method for transferring data over a USB (Fig. 6C), the method comprising the steps of: polling a burst communication adapter device (Column 9, lines 10-20 describes the polling of packets) coupled to the USB (Fig. 2A, element 118 and Column 18, line 59 to Column 19, line 25) using a first type of channel for the burst communication adapter device; receiving a reply message from the burst communication adapter device (the distributed burst engine, DBE is the PCI bus master and soliciting data to/from the target has handshaking protocols of PCI local bus where acknowledgement signals from the target, I/O endpoint device for instance, are the reply messages, Column 5, lines 1-30), the reply message indicating that the burst communication adapter device has data for transfer via a second type of channel for the endpoint device (I/O channel, Fig. 6C); responsive to receiving the reply message, issuing a bulk channel read request (Fig. 4, solicit request) for the burst communication adapter device.

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5. As per claim 3, Bonola discloses the method of claim 1, where the first type of channel for the burst communication adapter device further comprises an Interrupt channel (Column 9, lines 10-40 by having an interrupt packet, inherently means there is a channel for the interrupt to be sent through).

6. As per claim 4, Bonola discloses the method of claim 3, where the second type of channel for the burst communication adapter device further comprises a bulk channel (the I/O channel over, Fig. 6C, is a bulk channel, allowing for bulk data transfer, USB can transfer at up to 400Mbps).

7. As per claims 5 and 6, Bonola discloses a computer readable medium having stored therein instructions (in request and free queues of Fig 4) for causing a central processing unit (Fig 2A, element 100) to execute the methods of claims 1 and 4.

8. Claims 16-20 are rejected under 35 U.S.C. 102(a) as being anticipated by No. US006128673A to Aronson et al. (hereafter Aronson).

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9. As per claim 16, Aronson discloses a USB communication adapter (a way to adapt USB signaling to Ethernet protocol signaling and vice versa, Fig. 2) comprising: an Ethernet physical layer (Fig. 2, element 82) transceiver having an associated Ethernet MAC protocol process (Fig. 6); a USB driver in communication with said MAC process (Fig. 2, elements 52 and 68), said USB driver including an interrupt channel process and bulk transfer channel process (Fig. 2, element 80 and Fig. 4, element 116 bulk data and interrupts sent over bus); a USB physical layer (Fig. 2, elements 52) in communication with said USB driver (Fig. 2, element 68), said USB physical layer being adapted for communication with a USB host device (Fig. 2, element 68); wherein upon receipt of an Ethernet packet addressed to said Ethernet adapter, said Ethernet adapter transmits a data present signal (e.g., packet received bit, Fig. 4 after first state) via said interrupt channel process (Fig. 2, element 116).

10. As per claim 17, Aronson discloses claim 16, wherein the data present signal comprises a data present flag bit (either the Packet RCVD or Valid Token bit in Fig. 4).

11. As per claims 18 and 19, Aronson discloses claim 18, wherein both signals indicate the number of whether the one packet has been successfully sent and received.

12. As per claim 20, Aronson discloses claim 16, further comprising a class driver software module adapted for running on a host computing platform (Fig. 2 being the host system), wherein said class driver software includes instructions to issue a bulk-in read command in response to an interrupt reply message (Fig. 8, if the wait loop 270 receives a USB end point 1 interrupt, an action 296 waits for USB data from the host, effectively a bulk read-in command based on interrupt state).

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13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 2 and 7 are rejected under 35 USC 103(a) as being unpatentable over Bonola in view of No. US005832492A to Wooten.

Bonola discloses claim 1 and the I/O channel (bulk channel).

Bonola does not disclose expressly an amount of data to be transferred over USB and the Transfer TD specifying this amount. Furthermore, Bonola does not describe the step of creating a bulk list TD and linking the TD to an Endpoint descriptor corresponding to the second type of channel for the burst communication adapter device.

Wooten discloses having transfer descriptors and endpoint descriptors on the same list and linking the two (Fig. 4A, elements 404 and 406) for transfer over an USB I/O channel. The transfer descriptor also has a field given to indicate the amount of data to be transferred (the buffer end field, Fig. 4B, element 414).

Bonola and Wooten are analogous art because they are from the same field of endeavor in transferring data over a USB channel.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use descriptors, particularly transfer and endpoint descriptors when transferring data.

The suggestion/motivation for doing so would have been to provide a convenient and efficient method of processing transfer requests (Summary of Invention by Wooten).

Therefore, it would have been obvious to combine Wooten with Bonola for the benefit of convenient and efficient processing of transfer requests.

15. Claims 8-15 are rejected under 35 USC 103(a) as being unpatentable over Bonola in view of Wooten.

16. As per claims 8, 9, 12 and 13, Bonola discloses a host system bus (Fig. 2, bus between elements 112 and 100); a memory device coupled to the host system bus (Fig. 2A, elements 200 and 202, blown up view in Fig. 4); a Universal Serial Bus (Fig. 2A, element 118 and Column 18, line 59 to Column 19, line 25); a host controller coupled to the host system bus and the USB (Fig. 6C); a burst communication adapter device coupled to the USB (Fig. 2A, element 206), the burst communication adapter device configured to receive a polling message (Column 9, lines 10-20 describes the polling of packets), responsive by sending a reply message (the distributed burst engine, DBE is the PCI bus master and soliciting data to/from the target has handshaking protocols of PCI local bus where acknowledgement signals from the target, I/O endpoint device for instance, are the reply messages, Column 5, lines 1-30); and a microprocessor coupled to the host system bus (Fig. 2A, element 100), the microprocessor having a class driver (Fig. 2B) configured to send the polling message and receive reply messages.

Wooten discloses having transfer descriptors and endpoint descriptors on the same list and linking the two (Fig. 4A, elements 404 and 406) for transfer over an USB I/O channel. The transfer descriptor also has a field given to indicate the amount of data to be transferred (the buffer end field, Fig. 4B, element 414).

Bonola and Wooten are analogous art because they are from the same field of endeavor in transferring data over a USB channel.

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At the time of the invention it would have been obvious to a person of ordinary skill in the art to use descriptors, particularly transfer and endpoint descriptors when transferring data.

The suggestion/motivation for doing so would have been to provide a convenient and efficient method of processing transfer requests (Summary of Invention by Wooten).

Therefore, it would have been obvious to combine Wooten with Bonola for the benefit of convenient and efficient processing of transfer requests.

17. As per claims 10 and 14, Bonola combined with Wooten discloses the method of claims 8 and 12, respectively, where the first type of channel for the USB further comprises an Interrupt channel (Column 9, lines 10-40 by having an interrupt packet, inherently means there is a channel for the interrupt to be sent through).

18. As per claims 11 and 15, Bonola discloses the method of claims 8 and 12, respectively, where the second type of channel of the USB further comprises a bulk channel (the I/O channel over, Fig. 6C, is a bulk channel, allowing for bulk data transfer, USB can transfer at up to 400Mbps).

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to USB and Ethernet interfacing:

U.S. Pat. No. US006021129A to Martin

U.S. Pat. No. US006584519B1 to Russell

U.S. Pat. No. US006523081B1 to Karlsson et al.

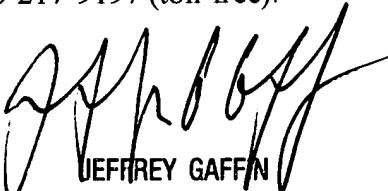
U.S. Pat. No. US006647438B1 to Connor et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S Chen whose telephone number is 703-605-0708. The examiner can normally be reached on M-F 8:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A Gaffin can be reached on 703-308-3301. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ASC
02/11/2004


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